

*Marked up copy of
amended claims 1, 2 and 9,
and new claim 10*

Claims

1. ^(amended) A system for the stimulation and production of a hydrocarbon containing substance from a location below the surface of the earth, where said location is in fluid communication, via a well casing, with said surface, said system comprising the steps of

5 a.) positioning a transducer mechanism within said well casing at said location, ^{*said mechanism comprising a plurality of axially aligned, spaced apart circular transducer elements, where said transducer elements are electrically arranged in parallel and electrically excitable to produce a high energy, narrow radiation pattern*} ~~where said mechanism is capable of producing a narrow circular band~~, of high energy impulses extending laterally from said well casing into said location;

10 b.) maintaining said transducer mechanism at a pressure ^{*within an oil filled medium*} essentially equal to the area in horizontal proximity to said mechanism; and,

c.) energizing said transducer mechanism.

2. ^(amended) The system according to claim 1, wherein said high energy, ^{*radiation pattern is*} ~~impulses are~~ horizontally focused within a circular band of between 2 and 3 degrees. ¹

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~~3. The system according to claim 1, wherein said transducer mechanism comprises a plurality of axially aligned, circular transducer elements.~~

4. The system according to claim 3, wherein said transducer elements are sealed within a pressure controlled housing.

5. The system according to claim 1, wherein said transducer mechanism is energized at a frequency of at least 20 kHz.

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6. The system according to claim 1, wherein said well casing includes a series of through holes at said location to facilitate movement of said hydrocarbon containing substance into said well casing.

7. The system according to claim 3, wherein each said transducer element is a piezoelectric substance.

8. The system according to claim 7, wherein said piezoelectric substance is a ceramic.

9. ^(amended) The system according to claim 8, wherein said system is energized at a frequency ^{of at least} ~~on the order of~~ 20kHz.

10 (new) The system according to claim 1, wherein adjacent said plural transducer elements are spaced apart by dielectric spacer members.

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